



UNITED STATES PATENT AND TRADEMARK OFFICE

un

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,633	08/18/2003	Fredrik Olsson	COTI-001/00US	4446

23419 7590 04/23/2007
COOLEY GODWARD KRONISH LLP
3000 EL CAMINO REAL
5 PALO ALTO SQUARE
PALO ALTO, CA 94306

EXAMINER

BOAKYE, ALEXANDER O

ART UNIT	PAPER NUMBER
----------	--------------

2616

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/643,633

Applicant(s)

OLSSON ET AL.

Examiner

ALEXANDER BOAKYE

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2, 4-5, 9-13, 16, 19-22 is/are rejected.
- 7) ☒ Claim(s) 3, 6-8, 14, 15, 17 and 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 11/23/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Claim Objections

1. Claims 5 and 15 are objected to because of the following informalities.

In claim 5, line 1, "adapted to" is not a positive recitation.

In claim 15, line 2, "adapted to" is not a positive recitation.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 5, are rejected under 35 U.S.C. 102(e) as being anticipated by Kuo (US Patent # 6,775,300).

Regarding claims 1 and 5, Kuo teaches a small form factor transceiver module (Figs. 1-2 and 15), comprising: a serial transfer interface (26) for coupling an incoming serial data stream (GbE bit stream) and an outgoing serial data stream (GbE bit stream) to a network (10) with a host (10/12)

Art Unit: 2616

having a gigabit Ethernet (GE) data protocol (column 4, lines 30-37); a transceiver (10/12) for coupling the incoming serial data stream and the outgoing serial data stream to a network having a time domain multiplexed (TMD) data protocol (column 4, lines 12-25);

a protocol converter coupling the serial transfer interface and the transceiver, the protocol converter (serializer 430) operative to convert an incoming TDM serial data stream received from the external network into a GE serial data stream for the host (column 4, lines 12-25 and column 15, lines 58-63), the protocol converter also operative to convert and outgoing GE serial data stream received from the host into a serial data stream for the external network (column 4, lines 12-25 and column 15, lines 58-63); wherein the transceiver module (10/12) is operative as both a transceiver and as a protocol converter (column 15, lines 58-63).

Regarding claim 2, Kuo teaches that the protocol converter is formed on an integrated circuit (the claimed protocol formed on an integrated circuit is inherent to SER/DES of Fig.1).

Regarding claim 5, Kuo teaches a controller adapter to communicate control information with the host via interband Ethernet frames exchanged with the host (column 3, line 60-column 4, lines 1-9).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 13, 16, 19, 20, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuo (US Patent # 6, 775,300) in view of Cox et al. (US Patent # 7,164,692).

Regarding claim 4, Kuo teaches all the claimed limitations as previously discussed with respect to claim 1 above, but fails to explicitly teach that the TDM protocol is a TDM protocol is selected from the group consisting of synchronous optical network (SONET). However, Cox teaches that the TDM protocol is a TDM protocol is selected from the group consisting of synchronous optical network (SONET)(column 1, lines 45-50). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Kuo to include the feature that TDM protocol is selected from the group consisting of synchronous optical network (SONET) such as one taught by Cox with motivation being that it provides capability of multiplexing many separate slower signals into the high speed SONET format.

Regarding claim 13, Kuo teaches system, comprising: a small form factor interface converter transceiver module and a connection port of an external network having a time division multiplexed (TDM) data protocol, the

Art Unit: 2616

transceiver module (Figs.1-2 and 15) comprising: a serial transfer interface module(26) for coupling an incoming serial data stream (GbE bit stream) and an outgoing serial data stream(GbE bit stream) to a host (10/12) having a gigabit Ethernet (GE) data protocol (column 4, lines 30-37) ; a transceiver for coupling said incoming serial data stream and said outgoing serial data stream to a network having a time domain multiplexed multiplexed (TDM) data protocol (column 4, lines 12-25);

and a protocol converter coupling said serial transfer interface and said transceiver, said protocol converter operative to convert an incoming TDM serial data stream received from said external network into a GE serial data stream for said host (column 4, lines 12-25 and column 15, lines 58-63), the protocol converter also operative to convert an outgoing GE serial data stream received from said host into a TDM serial data stream for said external network (column 15, lines 58-63).

Kuo differs from the claimed invention in that Kuo does not disclose a router having a gigabit Ethernet (GE) data protocol. However, Cox reference Figure 2 discloses a router having a gigabit Ethernet (GE) data protocol (column 8, lines 14-26). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Kuo to include the feature of a router having a gigabit Ethernet (GE) data protocol such as the one taught by Cox with motivation being that it provides capability of routing packet at high speed.

Regarding claim 16, Kuo teaches a method of protocol conversion using a small form factor transceiver module for coupling a serial data stream and an external network (Figs 1-2 and 15), comprising: within the module, converting a Gigabit Ethernet data protocol of a serial data stream having a time division multiplexed (TDM) protocol of the external network prior to transmitting the serial data stream to the external network (column 4, lines 12-25 and column 15, lines 58-63); and within the module, converting the TDM protocol of a serial data stream received from the external network into the Gigabit Ethernet data protocol prior to transmitting the serial data stream (column 4, lines 12-25 and column 15, lines 58-63); wherein the module is operative as both a transceiver and as a protocol converter (column 15, lines 58-63).

Kuo differs from the claimed invention in that Kuo does not disclose a router having a gigabit Ethernet (GE) data protocol. However, Cox reference Figure 2 discloses a router having a gigabit Ethernet (GE) data protocol (column 8, lines 14-26). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Kuo to include the feature of a router having a gigabit Ethernet (GE) data protocol such as the one taught by Cox with motivation being that it provides capability of routing packet at high speed.

Regarding claim 19, Kuo further teaches that the module is capable of performing protocol conversion for a plurality of TDM data protocols; further

Art Unit: 2616

comprising: configuring the module to perform protocol conversion for a selected TDM data protocol (column 4, lines 12-25 and column 25, lines 58-63).

Regarding claim 20, Kuo teaches all the claimed limitations as previously discussed with respect to claim 16 above but fails to explicitly teach performing Ethernet flow control to match a data rate of the router and the external network. However, Cox reference Figure 2 teaches performing Ethernet flow control to match a data rate of the router and the external network (column 8, lines 33-45 and column 9, lines 14-24). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Cox into the system of Kuo in order to be able to control flow rate, thus enhancing efficiency.

Regarding claim 21, Kuo teaches all the claimed limitations as previously discussed with respect to claim 16 above but fails to explicitly teach a SONET protocol, the method further comprising: using an optical transceiver to couple SONET signals to an optical fiber interface. However, Cox discloses a SONET protocol, the method further comprising: using an optical transceiver to couple SONET signals to an optical fiber interface (column 9, lines 1-8 and column 10, lines 56-65 and). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to

Art Unit: 2616

incorporate the teachings of Cox into the system of Kuo in order to be able to provide high speed.

4. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuo (US Patent # 6,775,300) in view of Lahat (US Patent # 6,963,561).

Regarding claim 9, Kuo teaches all the claimed limitations as previously discussed with respect to claim 1 above but fails to explicitly teach a plesiosynchronous data hierarchy (PDH) protocol adapted for T1/E1 signals. However, Lahat teaches that a plesiosynchronous data hierarchy (PDH) protocol adapted for T1/E1 signals (column 4, lines 14-27 and column 7, lines 10-12). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Kuo to include the feature of a plesiosynchronous data hierarchy (PDH) protocol adapted for T1/E1 such as the one taught by Lahat with motivation being that by using time division multiplexing the PDH and Ethernet data, cost effectiveness could be achieved.

Regarding claim 10, Kuo teaches all the claimed limitations as previously discussed with respect to claim 1 above but fails to explicitly teach a plesiosynchronous data hierarchy (PDH) protocol adapted for T3/E3 signals. However, Lahat teaches a plesiosynchronous data hierarchy (PDH) protocol adapted for T3/E3 signals (column 4, lines 14-27 and column 7, lines 10-12). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Kuo to include the feature of a plesiosynchronous data hierarchy (PDH) protocol

Art Unit: 2616

adapted for T3/E3 such as the one taught by Lahat with motivation being that by using time division multiplexing the PDH and Ethernet data, cost effectiveness is achieved.

Regarding claim 11, Kuo teaches all the claimed limitations as previously discussed with respect to claim 1 above but fails to explicitly teach a SONET protocol selected from the group consisting of OC-3/STM-1. However, Lahat teaches a SONET protocol selected from the group consisting of OC-3/STM-1 (column 1, lines 41-46 and column 2, lines 19-24). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Kuo to include the feature of OC-3/STM-1 such as the one taught by Lahat with motivation being that it provides high speed.

5. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuo (US Patent # 6,775,300) in view of Hardwick et al. (US Patent # 5,550,816).

Regarding claim 12, Kuo teaches all the claimed limitations as previously discussed with respect to claim 1 above but fails to explicitly teach where the first protocol converter is configured to perform protocol conversion including at least one member from the group consisting of frame relay mapping. However, Hardwick teaches protocol converter is configured to perform protocol conversion including at least one member from the group consisting of frame relay mapping (column 42, lines 43-60). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Hardwick into the system of Kuo as modified by Cox in order to be able to offer frame relay to end users.

Claim 22 rejected under 35 U.S.C. 103(a) as being unpatentable over Kuo (US Patent # 6,775,300) in view of Cox et al. (US Patent # 7,164,692) as applied to claim 16 above, and further in view of Blackburn (US Patent # 7,139,255).

Regarding claim 22, Kuo as modified by Cox fails to explicitly teach using an analog front end to couple PDH signals to copper cables. However, Blackburn discloses using an analog front end to couple PDH signals to copper cables (column 1, lines 27-34 and column 5, lines 45-63). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Blackburn into the system of Kuo as modified by Cox in order to be able to achieve cost effectiveness.

Allowable Subject Matter

6. Claims 3, 6-8, 14-15, 17, 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Boakye whose telephone number is (571) 272-3183. The examiner can normally be reached on M-F from 8:30am to 6:00pm. If

Art Unit: 2616

attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham, can be reached on (571) 272-3179. The Fax number is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or PUBLIC PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **Electronic Business Center (EBC)** numbers at 866-217-9197 and 703-305-3028.

Alexander Boakye

Patent Examiner



04/15/07